

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/058145 A3

(51) International Patent Classification⁷: **A61B 5/04**

(US). WINSTON, Ken, R. [US/US]; 24668 Foothills Drive North, Golden, CO 80401 (US).

(21) International Application Number:
PCT/US2004/042488

(74) Agent: **MACHELEDT, Jean, M.**; Macheledt Bales & Heidmiller LLP, 501 Skysail Lane, Suite B100, Fort Collins, CO 80525-3133 (US).

(22) International Filing Date:
17 December 2004 (17.12.2004)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/530,696 17 December 2003 (17.12.2003) US

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

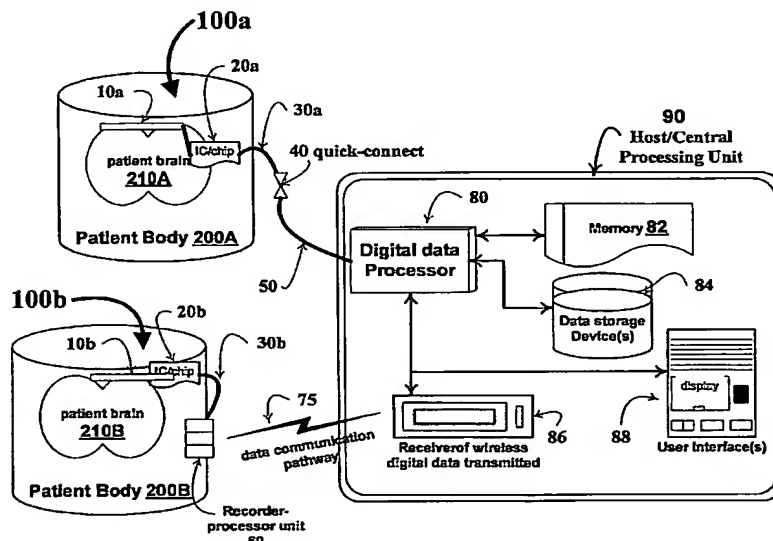
(71) Applicant (for all designated States except US): **THE REGENTS OF THE UNIVERSITY OF COLORADO, A BODY CORPORATE** [US/US]; 4001 Discovery Drive, Suite 390 / 588 UCB, Boulder, CO 80309 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **VANSICKLE, David, P.** [US/US]; 2041 Ivy Street, Denver, CO 80207

[Continued on next page]

(54) Title: **ACTIVEINVASIVE EEG DEVICE AND TECHNIQUE**



(57) Abstract: An electrode device for taking a plurality of EEG measurements, and an associated method of taking EEG measurements, whereby a plurality of electrode contact-points configured atop a support member are in electrical communication with, and in relative proximity to, an integrated circuit comprising converter circuitry adapted for converting analog EEG signals measured, having originated from within a patient, into digital signals prior to transmission thereof to a processing unit. The integrated circuit/circuitry (IC) may be supported by the support member or by a lead assembly having wiring for the digital signal transmission. The support member may have a plurality of layers and be generally flexible; as fabricated of any of a number of flexible, generally insulative biocompatible materials to which circuitry may be etched or deposited, exhibiting sufficient structural integrity to decrease likelihood of degradation during surgery or once implanted.



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
24 November 2005